The main problem discussed in this thesis is about finding an enclosure of the solution set of an interval linear system with linear dependencies. We get familiar with definitions from interval arithmetic and analysis. Then we extend them to matrices and linear systems, where we introduce several modern approaches to finding an enclosure and divide them thematically. Most of them are implemented in MATLAB using INTLAB library. We compare their precision and computational time on Toeplitz, symmetric and random matrices. For dependencies we design our memory saving representation. The results are interpreted and the final function, which can compute either fast, sharp or memory efficient, is build on individual methods.